

um gate sensitivity SCR. The SCR 27 is a three-lead SCR having its anode 28 connected to the anode gate 3 of the SCR 5 and its cathode 29 connected to the cathode gate 4 of the SCR 5. The antenna 25 is connected through the resistor 24 to the cathode gate 30 of the SCR 27. A capacitor 31 and a resistor 32 connected in parallel are connected between the cathode gate 30 and the cathode 29 to form a bypass circuit of the type heretofore mentioned.

In this FIG. 6 circuit the SCR 27 functions as a high impedance device which is discontinuously switchable from a high impedance state to a low impedance state by regulating a control terminal thereof and in this respect is similar in operation to the neon tube 21. The signal from an operator's hand on the antenna 25 turns the SCR 27 ON, causing current to flow from the anode gate 3 to the cathode gate 4 of the SCR 5 which, in turn, switches the SCR 5 ON. The operation is thus very similar to the operation of the circuit of FIG. 2. However, this FIG. 6 circuit is more expensive to manufacture; nevertheless, it is easier to tailor to special environments in which, for one reason or another, the use of neon tubes is either not desirable or not permitted.

It thus will be seen that there are provided circuits which achieve the various objects of the invention and which are well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein described or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. A touch responsive switching circuit comprising, semiconductor means discontinuously switchable between a conductive state and a nonconductive state, said semiconductor means including at least an output terminal, a return terminal and an electrically responsive control terminal, an external source of electrical energy having a grounded terminal, a full wave rectifier bridge having a pair of input terminals and a pair of output terminals, an electrical energy load, circuit means connecting said external source of electrical energy in series with said bridge input terminal and said electrical energy load, circuit means connecting said bridge output terminals, said output terminal of the semiconductor means and said return terminal of the semiconductor means in series, a voltage supply terminal which is a source of electrical energy with respect to said control terminal, normally high impedance electronic means constituting series connected impedances at least one of which is normally high, said normally high impedance electronic means having a control terminal constituting the junction between said impedances, said at least one normally high impedance being discontinuously changeable between a normal high impedance state and a low impedance state, contact means adapted to be touched by a foreign body, circuit means connecting said voltage supply terminal to said control terminal of said semiconductor means through said high impedance means and circuit means connecting said contact means to the control terminal of said high impedance means, so that when said contact means is touched by a foreign body the impedance of said at least one high impedance is switched from a high impedance state to a low impedance state, such switching of said at least one high impedance to the low impedance state permitting electrical energy to be applied therethrough from said voltage supply ter-

minal to said control terminal of the semiconductor means in a sufficient amount to forthwith switch the semiconductor means from one of its said states to the other of its said states so as to control the flow of electrical energy from said bridge and said source of electrical energy through said load and provide an essentially full wave output.

2. A touch responsive switching circuit as set forth in claim 1, wherein both of said impedances are normally high.

3. A touch responsive switching circuit as set forth in claim 1, wherein the control terminal of the normally high impedance electronic means has a sensitivity not exceeding about 10 microamperes.

4. A touch responsive switching circuit as set forth in claim 2, wherein the semiconductor means has a gate sensitivity not exceeding 10 microamperes.

5. A touch responsive switching circuit as set forth in claim 1, wherein the semiconductor means has a gate sensitivity not exceeding 10 microamperes, and wherein the control terminal of the normally high impedance electronic means has a sensitivity not exceeding about 10 microamperes.

6. A touch responsive switching circuit as set forth in claim 1, wherein the semiconductor means has a gate sensitivity not exceeding 10 microamperes, wherein both of the impedances are high impedances, and wherein the semiconductor means is an SCR.

7. A touch responsive switching circuit as set forth in claim 1, wherein said at least one high impedance comprises a glow discharge device and the other impedance is a resistor, said glow discharge device in its low impedance state operating at a level between the nonself-maintained discharge point and the beginning of the normal glow discharge region.

8. A touch responsive switching circuit as set forth in claim 7, wherein the voltage supply terminal is an anode gate terminal of the semiconductor means, the electrically responsive control terminal is a cathode terminal of the semiconductor means, and the output terminal is an anode terminal of the semiconductor means, and wherein a resistor and a capacitor are connected in parallel between said cathode gate terminal and said cathode terminal.

9. A touch responsive switching circuit as set forth in claim 7, wherein the voltage supply terminal is an anode terminal of the semiconductor means, wherein the return terminal is the cathode terminal of the semiconductor means, wherein the electrically responsive control terminal is a cathode gate terminal of the semiconductor means, wherein the output terminal is the anode terminal of the semiconductor means, and wherein a resistor and a capacitor are connected in parallel between said cathode gate terminal and said cathode terminal.

10. A touch responsive switching circuit as set forth in claim 1, wherein the normally high impedance electronic means comprises a pair of glow discharge devices connected in series circuit with the control terminal at the junction between said glow discharge devices, each said glow discharge device in its low impedance state operating at a level between the nonself-maintained discharge point and the beginning of the normal glow discharge region.

11. A touch responsive switching circuit as set forth in claim 1, wherein an energy storage means is connected between the return terminal and the electrically responsive control terminal of the semiconductor means to latch the semiconductor means ON when it is turned ON.

12. A touch responsive switching circuit as set forth in claim 11, wherein the energy storage means is a capacitor.